

diagnostic armamentarium. It can give us important information that neither the hand nor the eye nor the ear can discover.

384 Post Street.

REFERENCE

1. Carter, J. B.: *The Fundamentals of Electrocardiographic Interpretation*, J. A. M. A., Vol. 99, No. 14, p. 1167 (Oct. 1), 1932.

DISCUSSION

LEWIS GUNTHER, M. D. (1930 Wilshire Boulevard, Los Angeles).—Doctor Behnemann's paper shows the value of the electrocardiogram in detecting irregularities of the heart rhythm, and also hidden subclinical diseases of the ventricular muscles.

The greatest value of the electrocardiogram lies in its ability to teach the clinician the manner in which he may train his finger, his eye and his ear to detect the irregularities at the bedside. After a period of time, where close check is made on the clinical studies by electrocardiograms, the clinician may learn to accurately diagnose, or strongly suspect, more than 90 per cent of these irregularities, without having to resort to mechanical aids.

A situation in which the electrocardiogram, by giving collaborating evidence, proves itself to be a great teacher in clinical and bedside medicine, occurs in certain types of acute pericarditis, following acute upper respiratory infections with or without concomitant rheumatic fever. Patients in this group complain of a vague illness, consisting of malaise, perhaps a little fever, excessive rapidity of the pulse on the slightest exertion or physical activity. There are almost no physical findings, but still there exists a disability so far out of proportion to what the doctor finds clinically at the bedside, that one may be rightly puzzled at the validity of the patient's complaints.

However, detailed attention to auscultation at the base of the heart with the *Bell* stethoscope, using adequate and forcible pressure on the skin, will often detect a faint, rather high-pitched short systolic crackling friction. This friction is sometimes easily audible, and sounds like the to-and-fro crackling noise produced when the corner of a sheet of very stiff paper is bent back and forth between the thumb and forefinger. The result of the electrocardiogram in such instances shows a striking inversion of the T waves, sometimes in all three leads, and the waves are often characteristically curved as in the Pardee coronary T wave. However, these patients rapidly resume a normal electrocardiogram after a week or ten days in bed, and thereafter rarely show evidence of disease of the ventricular muscles.

There is a tendency among many physicians to administer digitalis in heroic doses to any patient who has a rapid and regular pulse, as well as to those whose pulse is irregular and rapid. And when the patient vomits, the procedure seems to be to force it into the system by intramuscular injection. In the occasional patient who is sensitive to digitalis the danger is great. When patients with regular rhythms are closely followed by serial electrocardiograms under digitalis therapy, much to one's surprise it may be seen at times that full digitalization effect is seen on the T wave of the electrocardiogram, when only one-half of the calculated Eggleston's dosage has been administered.

In the experience of the writer it has not been unusual to find a patient with a well-developed ventricular tachycardia who has been given a full calculated digitalis dosage in a short period of time. Under these circumstances the writer has found it almost impossible to reverse the fatal tachycardia. It may be open to question as to whether or not the digitalis poisoning produced that particular episode; but it is a well-known fact that digitalis intoxication may result in a fatal ventricular tachycardia.

Therefore, in this writer's opinion, it is of utmost importance for the welfare of the patient that the general practitioner should acquaint himself with the exact mechanism of the rapid pulse by taking an electrocardiogram before such digitalis therapy is commenced. The delay occasioned by the procedure of taking an electrocardiogram when there is even the slightest question of the accuracy of the bedside diagnosis of the tachycardia, is

far less serious than the routine use of digitalis in every rapid pulse rate.

In conclusion, therefore, the writer would again like to emphasize that the value of the electrocardiogram, as a teacher to the bedside clinician, cannot be overestimated.

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JOHN J. SAMPSON, M. D. (490 Post Street, San Francisco).—The essayist has well outlined the numerous instances in which the electrocardiogram is of value to the practicing physician. Our outlook on the situation in 1935 is altered materially from that of ten years ago, when the only means of taking an electrocardiogram was with the large cumbersome machine to be had only in hospitals. Many portable models are now available that enable us to carry the study of certain problematic cases to completion at the patient's bedside, and this is especially true of acute coronary artery occlusion.

Unfortunately, interpretation of electrocardiograms is not always a very simple matter. Whereas characteristic pictures, such as deep inversion of T waves or the common forms of auricular fibrillation and ectopic beats, may be readily diagnosed with little training, border-line deviations from the normal are very likely to be either over- or underemphasized as to their clinical importance, with out quite a reasonable amount of associated clinical and electrocardiographic experience. Often the slight deepening of Q waves, and depression or elevation of S-T intervals, may be the sole determining elements in establishing a diagnosis of acute coronary artery occlusion. On the contrary, slurred S waves and S-T intervals commonly occur in normal individuals, and are frequently misinterpreted as evidence of heart-muscle damage.

One must be cautious in reading too much of the clinical state of the patient from the electrocardiogram. After all, it is only a record of the nature of the excitation and contraction wave in passing through the heart, and tells practically nothing of the circulatory dynamics. It is not unknown to find individuals with organic heart disease involving one or more valves, and even with congestive or anginal heart failure, who have absolutely normal records although this occurrence is rare. Likewise, it is no more necessary to rush to the taking of an electrocardiogram on every case of heart disease where the diagnosis of anatomical and functional disturbances are clear than to take blood counts on every characteristic acute common cold.

Several years ago we estimated, in the laboratory of the University of California, that at least 80 per cent of the patients on whom electrocardiograms had been taken for either heart-muscle damage, arrhythmia or miscellaneous disturbances such as pericarditis, were adequately diagnosed clinically prior to the taking of records. Thus, whereas I quite agree with Doctor Behnemann as to the many uses of this valuable technique and its absolute necessity in certain instances of heart disturbances, I must admit we should be well able to do without it in many instances if we use our clinical diagnostic and prognostic abilities.

CANCER OF THE RECTUM*

By WILLIAM H. DANIEL, M.D.
Los Angeles

DISCUSSION by Montague S. Woolf, M.D., San Francisco; William H. Kiger, M.D., Los Angeles; James W. Morgan, M.D., San Francisco.

IT is never amiss, in discussing cancer of the rectum, to emphasize the early symptoms, the disregard of which so often allows a curable case to become incurable. The most common are bleeding, which may occur late; change in bowel function, such as constipation or frequency; loss of weight; discomfort and pain. Many of these cases have been treated for colitis, amebiasis, injected for hemorrhoids, or subjected to colon

* Read before the General Surgery Section of the California Medical Association at the sixty-fourth annual session, Yosemite National Park, May 13-16, 1935.

irrigations without digital or proctoscopic examination, by which 100 per cent of these lesions are demonstrable. The negative barium enema should not be regarded as diagnostic, since the majority of tumors of the rectum do not show a filling defect. It is unfortunate that the majority of the rectal cancers occur in the silent roomy ampulla, or the rectosigmoid, and are not suspected until extension to adjacent or distant organs has taken place, or the systemic effects are such that a radical operation is hazardous.

BIOPSY

It is believed that cancer of the rectum begins in the mucosa, and that adenomata, and polypi, especially those with a broad base, are potential carcinomata. Microscopic examination of tissue is indicated to confirm the diagnosis, and to determine the grade of malignancy. A negative report is a demand for another biopsy, especially if the growth feels and looks like cancer.

INDICATIONS FOR OPERATION

Operability depends upon many factors, the most important of which are: the condition of the patient, and the experience and ability of the surgeon. A rectal cancer should be considered operable when it may be removed in its entirety, without unduly jeopardizing the life of the patient; or when, even in the presence of moderate metastases, its removal will prolong the life of the patient with mental and physical comfort.

The majority of these patients are between the ages of fifty and seventy-five years. Radical one- or two-stage operations must be considered with care in those over sixty. In those under thirty, all methods of treatment are usually inadequate, and the most radical procedure is indicated.

Moderate metastasis in the liver does not forbid surgical removal of the tumor. The patient who knows his cancer is gone is much more comfortable and hopeful.

The welfare of the patient is the chief consideration in the treatment, which has as its object the complete eradication of the disease, or the maximum extension of useful life with mental and physical comfort. The surgeon should not have a fixed rule as to choice of operation, but should be guided by the physical and laboratory findings. He should not attempt to treat all cases by any one method, as no one procedure is applicable in all cases. The tumor may be small, low, and movable, and yet be highly malignant. The size of growth is no indication of metastasis. The lesion growing into the bowel wall is more prone to metastasize than one extending into the lumen. A growth may be easily resectable, but the condition of the patient, or the presence of metastases, make the effort useless. The condition of the heart and blood pressure may contraindicate suitable anesthesia and a prolonged surgical procedure.

CHOICE OF SURGICAL PROCEDURES

After the patient has been put in as good condition as possible, the surgeon must then choose

the procedure which, in his opinion, offers the most for that particular patient. The five most common surgical methods are: (1) Abdominoperineal resection of the sigmoid and rectum in one or two stages; (2) colostomy and perineal resection; (3) colostomy and posterior excision; (4) local excision; (5) colostomy, palliative only.

The abdomen should be explored, unless there is some definite contraindication, to ascertain the presence of metastases. A colostomy is always indicated unless the growth is low and small, and of low malignancy, and local resection offers a reasonable chance for cure. An incontinent rectum is much more disagreeable than an abdominal anus. The colostomy patient should not be an object of pity, for he quickly becomes accustomed to the slight inconvenience. A selected diet makes its care fairly simple.

SURGICAL PROCEDURE MUST BE SUFFICIENTLY RADICAL

To be successful, every procedure must be sufficiently radical to remove all the growth and lymphatic channels. The abdominoperineal resection of the sigmoid and rectum is the ideal procedure, because more of the lymphatic structures are removed. Although the mortality rate may be higher, the possibility of recurrence is less. The one-stage operation is the most ideal, if the risk to the patient is not too great. The percentage of operability is much less than in the two-stage operation. The two-stage method is much less dangerous, since the patient has a chance to recover from the colostomy operation, before the more drastic procedure is undertaken. Bowel function is restored, the patient's food and water intake become more normal, and the inflammatory process about the tumor may subside, allowing safer removal. If there is any marked degree of obstruction, or the growth large or fixed, the two-stage method is the one of choice.

The colostomy and posterior resection method is favored when the growth is low and the patient a poor risk or advanced in years. Perineal excision without colostomy has been discarded by most surgeons as being inadequate. In some medical centers in Europe, posterior excision with perineal anus is still the method of choice. Local excision with cautery is satisfactory in a very limited field. Recurrences are common, because ordinarily the lymphatics within the peritoneal cavity are not removed.

ADENOMATA AND POLYPI

Adenomata and polypi, no matter how small, should be regarded as possible cancer, a section taken for microscopical examination, and the tumor treated thoroughly with the cautery. In cases of malignant polypi, the question arises whether to perform radical operation or to attempt local removal. If the mass is small, and movable, treatment with the cautery may be sufficient. On the other hand, this procedure may be wholly inadequate because metastases may already be present, or the cancer cells may have extended beyond reach of the heat. If it is reasonable to

assume that invasion of other tissue has already begun, radical operation is indicated. The question is a difficult one to answer, and the surgeon may have cause to regret either procedure that he may select.

RADIATION THERAPY

Radiation in all its forms is still a matter of controversy. The value of radium has been a topic of disagreement for many years. Binckley states that the treatment of rectal cancer remains a surgical problem, but radium and deep-radiation are important aids to surgery.

ANALYSIS OF AUTHOR'S CASES

The foregoing opinions have been formulated from a study of a large number of articles in the literature dealing with this subject, and from examination and observation of approximately 240 cases. More than one-half of this number were treated personally.

There were twelve patients, or 5 per cent, below thirty years of age, and twenty-seven, or 11 per cent, below forty years of age. In this group only three below thirty years were operable, and only two are living. There are five living below forty years of age. All of these had the abdominoperineal resections. The remainder were either inoperable when seen, or had a recurrence from a previous operation. Practically all in this group were of high-grade malignancy. Sixteen per cent were over seventy, and 40 per cent over sixty, leaving 50 per cent in the most favorable period, from forty to sixty years of age.

There were 158 biopsies recorded, and 120 were graded as follows: low—9 per cent, moderate—33 per cent, and high—58 per cent. Adenocarcinoma occurred in 91 per cent, epidermoid in 6 per cent, and 3 per cent were undifferentiated. Metastases were present, as a rule, in the high grade, though there were several in the moderate group. In several cases, it was necessary to do repeated biopsies, at times surgically, to make a positive diagnosis. Specimens of the same tumor may vary in grade. One biopsy was reported as Grade I, and a block from the surgical specimen was reported as Grade IV. We believe that the grading of tissue is of benefit in the prognosis as to recurrence, and in the choice of operation. The higher the grade, the more radical should be the procedure. Recurrences occurred usually in the high grades. In the whole group, according to available information, there have been nine recurrences from local and perineal excision, and two from abdominoperineal procedures.

There is an apparent variance between our operability figures and those reported in large clinics. Perhaps it is because there are more quacks, cults, and fake cures, in Southern California than elsewhere. In the clinic cases, only 35 per cent were operable, and in the private cases, 60 per cent operable. Estimated operability in the group as a whole compared closely with operability determined by exploration, namely, 45 per cent operable, and 55 per cent inoperable.

Experience with those patients having had deep radiation was limited. The results were disappointing, to say the least, the chief one being an unnecessary postponement of an inevitable demise.

There were several secondary involvements of the rectum from cancer of the cervix and prostate, and four which were considered to be implantations from carcinoma of the stomach.

The following procedures have been carried out: abdominoperineal, 22; colostomy posterior resection, 17; colostomy posterior excision, 11; local cauterization, 9; anterior resection, 1; cauterization through proctoscope, 8; colostomy, 62. There was a mortality of 16 per cent in the completed radical procedures.

IN CONCLUSION

In concluding, it is the desire to leave the thought that all colon and rectal disturbances, however slight, may mean cancer. The time for cure is in the early stages, and only by conscientious examination may these be discovered. The yearly examination of every person over forty is ideal, but impractical. We should not consider our mortality rate when the welfare of the patient is at stake. It is more justifiable to have a surgical death in the attempt to completely eradicate this disease, than to have a rapid recurrence. In case of failure, the greater service may have been rendered the patient and his family. Sane, radical surgery offers the greatest hope.

1930 Wilshire Boulevard.

DISCUSSION

MONTAGUE S. WOOLF, M.D. (384 Post Street, San Francisco).—In a short space Doctor Daniel has set forth many items of interest concerning cancer of the rectum. In the past, some patients came too late to the surgeon on account of the referring physician. The latter did not then avail himself of a digital examination, though it was suggested by the complaint. The patient complained of bleeding from the rectum, said he had piles, and was believed. This meant that many a patient suffering from carcinoma was treated on the diagnosis of the patient and, consequently, was allowed to live with his growth until it became inoperable. More recently the referring physician has come to realize that 80 per cent of cancers originating even as high as the rectosigmoid junction can be felt by the examining finger. The remaining 20 per cent could also be diagnosed by a physician, if a sigmoidoscope or a barium enema were used. In other words, the diagnosis of carcinoma of the rectum is not difficult. But still there are numerous patients who come too late to any physician. It is they who have to learn now that bleeding from the rectum can be very much more serious than hemorrhoids, and that only a physician can differentiate between the two lesions. Another reason why carcinoma is overlooked is that the age of the patient and the obstructive lesion in the rectal wall predispose to hemorrhoids. Therefore, the two conditions will more often than not occur concurrently.

Diagnosis must precede treatment, and a poor attempt at the former will lower the operability for cancer of the rectum. Doctor Daniel's operable figure of 45 per cent is too low for us to be satisfied. This figure does not seem to be much over 60 per cent in the very largest centers for this work. It seems important to let the public know that surgery is still the only treatment of cancer, but that cancer is curable by surgery. This implies that an individual ought to have a complete physical examination at least three times a year, especially when he reaches forty years of age. This part of the subject is one of education. Better-placed individuals are more often cured of cancer than those poorer, and it is not entirely a matter

of money. Education teaches an individual the facts of a situation and, more important, helps him to discriminate between them. Bleeding from the rectum, therefore, in one case will mean only "piles," in another many forms of intestinal disorder, among which cancer will be significant.

The primary and recurrent mortality of cancer in any region will, therefore, be lessened as the public becomes educated, and according to the development of expert surgery on the part of the physician. As far as the surgeon is concerned, great progress has been made in the surgical treatment of cancer of the rectum. Of operable cases less than 11 per cent can be the primary mortality in one of surgery's greatest operations, namely, the modern abdominoperineal procedure in one stage. This was formerly over 40 per cent in the hands of the originator. Five-year survivals from this operation are considerably over 50 per cent. The tragedy of the final results lies in the fact that not much over 50 per cent are operable when patients with the disease see the surgeon.

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WILLIAM H. KIGER, M.D. (1930 Wilshire Boulevard, Los Angeles).—There is one point that Doctor Daniels has mentioned that cannot be stressed too much, and that is, early diagnosis. We know that cancer remains local in this locality longer than anywhere else. There seems to be a lack of appreciation of this fact on the part of many of the profession, and many sufferers from this disease have been allowed to waste months of valuable time because their family physician did not take the trouble to make a digital examination of the rectum. If a patient complains of blood in the stool, it should always be thoroughly investigated. If it is fresh red blood, it is quite sure to come from low down in the bowel; darker, higher up. This examination should be made routinely: first, digital; second, anoscope; third, proctoscope; and, if necessary, barium enema, and always the enema before a barium meal. The radical one- or two-stage abdominoperineal is undoubtedly the operation of choice and the one that has given the most satisfactory results. The one-stage is preferable when possible.

There is another point which I think important, and will help these unfortunates to decide to submit to surgery after the diagnosis is made, and that is to overcome their dread of a colostomy. I have heard many patients, and the opinion was concurred by their family physician, say they would rather die than have a colostomy. A good colostomy, properly cared for, gives the patient very little trouble, and they are able to lead their regular lives. Their education requires a little time, and patience on the part of the surgeon, but it is well worth the time to all parties concerned.

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JAMES W. MORGAN, M.D. (384 Post Street, San Francisco).—Doctor Daniel's paper emphasizes the importance of early symptoms. At the University of California we spend a great deal of time teaching diagnosis to undergraduate and postgraduate students. We stress thorough investigation. The practitioner does not like to be reminded of his shortcomings, and he therefore resents our constant repetition of the term "adequate rectal examination." In the past six weeks, four patients with *palpable* rectal cancers have been sent to me. I have operated upon all of them, but I feel quite sure that they should have come earlier. Three of them had had local operations, two for hemorrhoids, and one for fistula. I was able to do radical operations for all of these patients, and their outlook is good; but the prognosis would have been much better if they had come in earlier. Forgive me, then, for repeating Moynihan's dictum: "In all cases of pain between the nipple and the knee, examine the rectum."

Except in rare instances, the patient deserves a very radical operation. The small early growth is no exception, for here is our best chance for complete cure. There is still much to be learned about carcinoma of the rectum, but the remarkable improvement in prognosis during the past few years is one of the outstanding accomplishments of surgery. We can now truthfully say that about half of the patients who present themselves early with malignant tumors of the lower colon and rectum can be cured.

HARRISON NARCOTIC LAW*†

DECISION OF THE DISTRICT COURT OF THE UNITED STATES IN: U. S. A., PLAINTIFF, VS. EDWARD H. ANTHONY, DEFENDANT

IN THE DISTRICT COURT OF THE UNITED STATES IN AND FOR THE SOUTHERN DISTRICT OF CALIFORNIA
CENTRAL DIVISION

UNITED STATES OF AMERICA, Plaintiff, vs. E. H. ANTHONY, et al., Defendants.

No. 12069-Y, 12070, 12071, 12072, Criminal

Appearances:

Peirson M. Hall, Esq., United States Attorney, by Howell Purdue, Esq., Deputy United States Attorney, Attorney for the Plaintiff.

Ames Peterson, Esq., Attorney for the Defendants.

In four indictments containing sixteen counts returned on August 30, 1934, the defendant E. H. Anthony, a physician, duly licensed to practice medicine in the State of California, and duly registered with the Collector of Internal Revenue for the Sixth District of California, and others were charged with the violation of Sections 1040 and 1044a of Title 26, U. S. C. A., commonly known as the Harrison Narcotic Act. Each of the counts, in effect, charged that the defendant and a certain druggist did sell, barter and dispense unlawfully certain quantities of morphin sulphate, not in good faith and not in the course of their professional practice. The indictments were dismissed as to the druggist. Four conspiracy counts contained in the indictments were also dismissed. A first trial had before the court with a jury, resulted in a disagreement. The second trial was had before the court without a jury.

The evidence upon the part of the Government showed that the defendant had prescribed quantities of morphin sulphate to four known addicts, James E. Jensen, Peter Mayers, William Avery and Joseph Tint, the persons named in the indictments. The times and the amounts were as follows:

In the case of James E. Jensen: June 16, 1934, 125 ½-grain tablets of morphin sulphate (with the direction, "Dissolve and use as directed"); June 19, 1934, 120 ½-grain tablets morphin sulphate (same directions); June 23, 1934, 90 ½-grain tablets morphin sulphate (same directions); June 27, 1934, 115 ½-grain tablets morphin sulphate (same directions); July 3, 1934, 120 ½-grain tablets morphin sulphate (same directions); July 8, 1934, 120 ½-grain tablets morphin sulphate (same directions); July 14, 1934, 120 ½-grain tablets morphin sulphate (same directions); July 18, 1934, 120 ½-grain tablets morphin sulphate (same directions); July 23, 1934, 110 ½-grain tablets morphin sulphate (same directions); July 28, 1934, 120 ½-grain tablets morphin sulphate (same directions).

In the case of Peter Mayers: June 11, 1934, 168 tablets ½-grain tablets morphin sulphate (with the direction, "Emergency L. A. Clinic"); June 18, 1934, 168 ½-grain tablets of morphin sulphate (same directions); June 25, 1934, 168 ½-grain tablets morphin sulphate (with the direction, "Dissolve and use as directed"); July 2, 1934, 168 ½-grain tablets morphin sulphate (same directions); July 8, 1934, 84 ½-grain tablets morphin sulphate (same directions); July 16, 1934, 100 ½-grain tablets morphin sulphate (same directions); July 23, 1934, 84 ½-grain tablets morphin sulphate (same directions); July 28, 1934, 30 ½-grain tablets morphin sulphate (same directions); July 30, 1934, 84 ½-grain tablets morphin sulphate (same directions).

In the case of William Avery: June 11, 1934, 150 ¼-grain tablets of morphine (with the direction, "Emergency L. A. Clinic"); June 14, 1934, 75 ¼-grain tablets morphin sulphate (same directions); July 8, 1934, 20 ¼-grain tablets morphin sulphate (with direction, "Dissolve and use as directed").

In the case of Joseph Tint: June 13, 1934, 120 ½-grain tablets of morphin sulphate (with the direction, "Dissolve and use as directed"); June 20, 1934, 110 ½-grain tablets morphin sulphate (same directions); June 26, 1934, 110

* From the press of the Los Angeles City Health Department, Los Angeles, 1936.

† This decision is given space in the original article section of CALIFORNIA AND WESTERN MEDICINE so that it may more easily find its place in the index of medical literature. See also in this issue, comments on page 115.